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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/772,976 | 02/05/2004 | Allan E. Blackburn | A36080 - 072731.0202 | 5204 |

21003 7590 07/11/2006

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NEW YORK, NY 10112

EXAMINER

KASTLER, SCOTT R

| | |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
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1742

DATE MAILED: 07/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/772,976

Applicant(s)

BLACKBURN ET AL.

Examiner

Scott Kastler

Art Unit

1742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/15/2006 has been entered.

Double Patenting

Claims 2-6 are objected to under 37 CFR 1.75 as being a substantial duplicates of each other. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k). In the instant case, the above claims differ from one another, only in the manner in which the programmable device is employed, and it has been well settled that the manner or method of use of an apparatus cannot be relied upon to fairly further limit claims to the apparatus itself. see MPEP 2114.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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Claims 1-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Entrikin et al. Entrikin et al teaches a cold hearth melting and refining arrangement including a cold hearth holding a pool of molten (10 in Entrikin et al), an electron gun system comprising a plurality of electron guns, configured to generate electron beams (14 or 15 in Entrikin et al) and a programmable controller for moving the electron beams in a pattern for evaporating impurities that collect on the pool edge (see col. 4 lines 27-35 for example Entrikin et al) thereby showing all aspects of the above claims since with respect to instant claims 1-6, the actual manner in which the electron gun is moved is a limitation directed to the use of the claimed apparatus and cannot be relied upon to further limit claims to the apparatus itself.

Claims 1-6 are rejected under 35 U.S.C. 102(b) as being anticipated by either of Harker'776 or Harker'635. Both of Harker'776 and Harker'635 teach a cold hearth melting and refining arrangement including a cold hearth holding a pool of molten metal (10), and a plurality of electron guns configured to generate electron beams (15) and a programmable controller for moving the electron beam in any desired pattern (see col. 2 lines 45-61 of each of Harker'776 and Harker'635 for example), thereby showing all aspects of the above claims since as stated above, the actual manner in which the electron gun is moved is a limitation directed to the use of the claimed apparatus and cannot be relied upon to further limit claims to the apparatus itself.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Entrekin et al. As applied to claims 1-6 above, Entrekin et al shows all aspects of the above claims except the specific step of sweeping one of the electron beams around the perimeter of the pool of metal to melt any solidified material (any “skull wing formations”), however, as stated above, Entrekin et al does specifically teach that “the directed energy input devices 14 and 15 are controlled by the control unit 18 so as to make certain that the molten material in the pool 21 contains no solid particles which might contaminate or cause solid inclusions to be incorporated into the ingot 26 and also to vaporize undesired constituents.”. (see col. 4 lines 28-35 for example). Because Entrekin et al specifically desires controlling the electron guns in a manner to vaporize undesired solidified constituents in or around the molten metal pool, motivation to program, or control the electron guns of Entrekin et al so that they vaporize or dissolve the undesired solidified constituents forming on the periphery of the molten metal pool (“skull wing” formations), would have been a modification obvious to one of ordinary skill in the art at the time the invention was made.

Response to Arguments

Applicant's arguments filed on 5/15/2006 have been fully considered but they are not persuasive. Applicant's argument that the new independent claim 1, by now reciting a second electron gun, distinguishes over the applied references is not persuasive because all of the cited references also teach the use of a plurality of electron guns, and the manner or method in which

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they are employed, with respect to claims 1-6, cannot be relied upon to fairly further distinguish these apparatus claims.

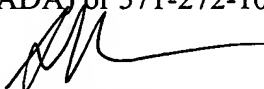
Applicant's further argument that the applied references do not teach sweeping an electron gun in the recited manner of instant claims 7-12 is not persuasive in view of the newly formulated rejection of these claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott Kastler whose telephone number is (571) 272-1243. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Scott Kastler

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Primary Examiner
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